Last DSM Algorithm
2005 Longitudinal Polarization PP-FPD Version

25th April 2005

Input Bits

Input Channel	Bit Description
0	Unused
1	VTX Information Bit 0 – BBC TAC difference in window Bit 1 – Unused Bit 2 – BBC East small-tile ADC sum over threshold 0 Bit 3 – BBC West small-tile ADC sum over threshold 0 Bit 4:15 - Unused
2	Unused
3	EMC Information Bits 0:1 – BEMC Jet Patch bits Bits 2:3 – BEMC high-tower bits Bit 4 - Unused Bit5 – J/Ψ-bit from BEMC-high towers Bit 6 – Adjacent jet patch bit Bits 7:8 – EEMC jet patch bits Bits 9:10 – EEMC high-tower bits Bits 11:15 - Unused
4	Miscellaneous Information Bit 0 – Blue bunch filled Bit 1 – Yellow bunch filled Bits 2:15 - Unused
5	FPD Information Bit 0:1 – Unused Bit 2 –. At least 1 of 4 FPD East ADC sums over threshold1 Bit 3 – At least 1 of 4 FPD West ADC sums over threshold1 Bit 4 – At least 1 of 4 FPD East ADC sums over threshold2 Bit 5 – At least 1 of 4 FPD West ADC sums over threshold2 Bit 6 – Both NE and SE modules over threshold 0 Bit 7 – Both NW and SW modules over threshold 0 Bit 8 – Both NE and NW modules over threshold 2 Bit 9 – Both NE and SW modules over threshold 2 Bit 10 – Both SE and NW modules over threshold 2 Bit 11 – Both SE and SW modules over threshold 2 Bits 12:15 - Unused
6	Special Trigger Requests Bits 0:13 - Unused Bit 14 – Zero-bias bit Bit 15 - Unused
7	Unused

Registers

None

Output Bits

Bit	Description
Bits 0:15	
0	BEMC-J/Ψ
1	Both BBC small-tile ADC sums over threshold
2	BBC TAC difference in window
3	“OR” of FPD bits 2, 3 (fast singles), 6, 7, 8, 9, 10 and 11 (coincidences)
4	“OR” of FPD bits 4, 5 (slow singles), 6, 7, 8, 9, 10 and 11 (coincidences)
5	EMC adjacent jet-patch trigger
6/7	BEMC high tower bits (coding three thresholds)
8/9	BEMC jet-patch bits (coding three thresholds)
10/11	EEMC high tower bits (coding three thresholds)
12/13	EEMC jet-patch bits (coding three thresholds)
14	Blue bunch filled AND yellow bunch filled
15	Zero bias trigger
Bits 16:31	Same definitions as bits 0:15

Internal Logic

- No Special Bits.
- Bits 6/7, 8/9, 10/11 and 12/13 code three thresholds.